REMARKS

In all other respects, the Application is now believed to be in proper form for examination, and prompt and favorable processing before the U.S. Patent and Trademark Office is accordingly courteously solicited.

Respectfully submitted,

DAVID A. JACKSON
Attorney for Applicant(s)
Registration No. 26,742

KLAUBER & JACKSON
411 Hackensack Ave., 4th Floor
Hackensack, NJ 07601
(201) 487-5800

MARKED-UP VERSION OF AMENDED CLAIMS

CLAIMS

1. An assay for detecting type IV cytosolic phospholipase A_2 ($cPLA_2$) or a protein immunologically homologous to type IV $cPLA_2$, the assay comprising ~~use~~ obtaining a sample of red blood cells, and examining said red blood cells for the presence of said type IV cytosolic phospholipase A_2 ($cPLA_2$) or said protein immunologically homologous thereto.

2. An assay according to claim 1 for use in the diagnosis of a disease in which dysfunction of cell signalling systems involving highly unsaturated fatty acids is implicated.

3. An assay according to claim 1 for use in monitoring the effectiveness of medication administered to a patient suffering from a disease in which dysfunction of cell signalling systems involving highly unsaturated fatty acids is implicated

4. An assay according to claim 1 for use in drug development for a disease in which dysfunction of cell signalling systems involving highly unsaturated fatty acids is implicated

5. A method of diagnosis of a disease in which dysfunction of cell signalling systems involving highly unsaturated fatty acids is implicated, said method comprising the detection of type IV cytosolic phospholipase A_2 ($cPLA_2$) protein or a protein immunologically homologous to type IV $cPLA_2$ in or on red blood cells.

6. A method of monitoring the effectiveness of medication administered to a patient suffering from a disease in which dysfunction of cell signalling systems involving highly unsaturated fatty acids is implicated, said method comprising the detection of type IV cytosolic phospholipase A_2 ($cPLA_2$) protein or a protein immunologically homologous to type IV $cPLA_2$ in or on red blood cells.

7. A method of drug development for a disease in which dysfunction of cell signalling systems involving highly unsaturated fatty acids is implicated, said method comprising the detection of type IV cytosolic phospholipase A_2 ($cPLA_2$) protein or a protein immunologically homologous to type IV $cPLA_2$ in or on red blood cells.

8. An assay ~~or method~~ according to ~~any one of claims 1 to 7~~ claim 1 wherein the red blood cells are isolated from the human body.

9. An assay ~~or method~~ according to ~~any one of claims 1 to 7~~ claim 7 wherein said assay or method comprises use of a whole blood sample without prior isolation of said red blood cells.

10. An assay ~~or method~~ according to ~~any one of claims 2 to 9~~ claim 2 wherein said disease is a disease or disease process in which type IV $cPLA_2$ activity or concentration is altered from normal levels.

11. An assay ~~or method~~ according to ~~any one of claims 2 to 9~~ claim 2 wherein said disease is a disease or disease process in which type IV $cPLA_2$ activity or concentration is increased.

12. An assay ~~or method~~ according to ~~any one of claims 2 to 11~~ claim 2 wherein the disease is schizophrenia, dyslexia, bipolar or manic depressive illness, cachexia or brain injury.

13. An assay ~~or method~~ according to claim 12 wherein the brain injury is stroke or mechanical brain injury.

14. An assay ~~or method~~ according to ~~any one of claims 1 to 13~~ claim 1 wherein the type IV $cPLA_2$ protein or the protein immunologically homologous to type IV $cPLA_2$ has a molecular weight in the range 80 to 110 kDa or in the range 70 to 80 kDa or in the range 50 to 60 kDa.

15. An assay ~~or method~~ according to ~~any one of claims 1 to 13~~ claim 1 wherein the type IV $cPLA_2$ protein or the protein immunologically homologous to type IV $cPLA_2$ has a molecular weight in the range 90 to 105 kDa or in the range 70 to 80 kDa or in the range 50 to 60 kDa.

16. An assay ~~or method~~ according to ~~any preceding~~ claim 1 comprising the steps of collecting a sample of blood from a subject and detecting the proteins *ex vivo*.

17. An assay ~~or method~~ according to claim 16 further comprising one or more of the steps of separating the red cells from the other blood components, disrupting the red cells, detecting the proteins either directly or following a protein separation technique.

18. An assay ~~or method~~ according to claim 17 wherein the red cells are disrupted by sonication, freezing, nitrogen cavitation or lysis.

19. An assay ~~or method~~ according to ~~any preceding~~ claim 1 wherein said proteins are detected by immunoassay.

20. An assay ~~or method~~ according to ~~any preceding~~ claim 1 wherein said proteins are detected using an antibody or antibodies that recognise an epitope or epitopes

from amino acids 82 to 749 of type IV $cPLA_2$ protein from human monocyte (U937) cells.

21. An assay ~~or method~~ according to ~~any preceding~~ claim 1 wherein said proteins are detected using an antibody or antibodies raised against an epitope or epitopes from amino acids 82 to 749 of type IV $cPLA_2$ protein from human monocyte (U937 cells) or raised against an epitope or epitopes of a synthetic peptide matching amino acids 82 to 749 of type IV $cPLA_2$ protein from human monocyte (U937) cells.

22. An assay ~~or method~~ according to claim 20 or 21 wherein said epitope or epitopes are from a peptide sequence or sequences which comprise the catalytic centre of type IV $cPLA_2$ protein from human monocyte (U937) cells.

23. An assay ~~or method~~ according to claim 20 or 21 wherein said epitope or epitopes are from the peptide sequence of amino acids 241 to 260 of type IV $cPLA_2$ protein from human monocyte (U937) cells.

24. An assay ~~or method~~ according to claim 19 wherein said proteins are detected using an antibody or antibodies raised against an epitope or epitopes from amino acids 1 to 216 of type IV $cPLA_2$ protein from human monocyte (U937) cells.

25. An assay ~~or method~~ according to ~~claims~~ claim 20, ~~21, 22, 23 or 24~~ wherein two or more of the antibodies are used in combination or in sequence to detect the said proteins with the required specificity.

26. An assay ~~or method~~ according to ~~any of claims 1 to 18~~ claim 1 for detecting type IV $cPLA_2$ wherein said proteins are detected by substrate assay.

27. A protein other than type IV $cPLA_2$ obtainable by isolation from red blood cells, said protein being immunologically homologous to type IV $cPLA_2$ and having a

molecular weight in the range 80 to 110 kDa or a molecular weight in the range 70 to 80 kDa or a molecular weight in the range 50 to 60 kDa.

28. A protein according to claim 27, said protein being immunologically homologous to type IV $cPLA_2$ and having a molecular weight in the range 90 to 105 kDa or a molecular weight in the range 70 to 80 kDa or a molecular weight in the range 50 to 60 kDa.

29. A diagnostic kit comprising means for disrupting red blood cells and further comprising an antibody or antibodies to a protein obtainable by isolation from red blood cells, said protein being type IV $cPLA_2$ protein or a protein immunologically homologous to type IV $cPLA_2$.

30. A diagnostic kit according to claim 28 wherein said antibody or antibodies is/are raised against an epitope or epitopes from amino acids 82 to 749 of type IV $cPLA_2$ protein from human monocyte (U937) cells.

31. A diagnostic kit according to claim 28 wherein said antibody or antibodies is/are raised against an epitope or epitopes from a peptide sequence or sequences which comprise the catalytic active centre of type IV $cPLA_2$ protein from human monocyte (U937) cells.

32. A diagnostic kit according to claim 28, ~~29 or 30~~ wherein said means for disrupting red blood cells is a means for lysing red blood cells.

33. A diagnostic kit according to claim 28, ~~29 or 30~~ which is suitable for near-patient testing.